

In the Claims

CLAIMS

Claims 1-49 (Canceled).

50. (Currently amended) A method of forming a polished material, comprising:

providing a substrate;

forming spaced trenches into the substrate, the substrate having an upper surface extending between the trenches;

forming a material within the trenches, the material comprising a lower layer and an upper layer over the lower layer, the lower layer comprising a stoichiometry the same as a stoichiometry of the upper layer, the lower layer substantially filling the trenches and having a different polishing rate than the upper layer, the lower layer joining the upper layer at an interface, the interface comprising first portions directly over the trenches and second portions directly over the upper surface of the substrate, the first portions being substantially coplanar; and

polishing the material down to an elevational level of at least one of the first and second portions of the interface.

51. (Previously presented) The method of claim 50 wherein the polishing comprises polishing the material to about an elevational level of the first portions of the interface.

52. (Previously presented) The method of claim 50 wherein the polishing comprises polishing the material to the second portions of the interface.

53. (Previously presented) The method of claim 50 wherein the first portions of the interface comprise an elevational plane below the second portions of the interface.

54. (Previously presented) The method of claim 50 wherein the second portions of the interface are shaped as peaks.

55. (Previously presented) The method of claim 50 wherein the second portions of the interface are shaped as peaks extending elevationally above the first portions of the interface.

56. (Previously presented) The method of claim 50 wherein the upper layer of the material comprises an uppermost surface, and the uppermost surface is shaped as peaks over the second portions the interface.

57. (Previously presented) The method of claim 50 wherein the upper layer of the material comprises an uppermost surface, and the uppermost surface is shaped as peaks over the second portions the interface and substantially planar over the first portions of the interface.

58. (Previously presented) The method of claim 50 further comprising polishing the material to an elevational level below the first portions of the interface.

59. (Previously presented) The method of claim 50 further comprising polishing the material to an elevational level below the first portions of the interface, wherein the polishing comprises polishing the first layer of the material at the second portions of the interface before the first portions of the interface.

60. (Previously presented) The method of claim 50 further comprising polishing the material to an elevational level below the first portions of the interface, wherein the polishing comprises polishing the first layer of the material at the second portions of the interface before the first portions of the interface, and wherein the polishing occurs at a faster rate at the second portions of the interface than the polishing at the first portions of the interface.

61. (Currently amended) A method of forming a polished material, comprising:

providing a substrate having a trench extending therein; and
forming a material within the trench, the material comprising a lower layer which polishes at a first rate and comprising an upper layer which polishes at a second rate which is faster than the first rate, the lower layer joining the upper layer at an interface; and
polishing the material.

62. (Previously presented) The method of claim 61 further comprising forming an etchstop over the substrate, the etchstop comprising an uppermost surface, and wherein at least a portion of the interface is elevationally proximate the uppermost surface of the etchstop.

63. (Previously presented) The method of claim 61 further comprising forming an etchstop over the substrate, the etchstop comprising an uppermost surface, and wherein at least a portion of the interface is elevationally proximate the uppermost surface of the etchstop, and wherein the polishing comprises polishing down to the uppermost surface of the etchstop.

64. (Previously presented) The method of claim 61 wherein the upper and lower layers comprise silicon dioxide.

65. (Previously presented) The method of claim 61 further comprising forming an etchstop over the substrate, wherein the substrate comprises monocrystalline silicon, and wherein the etchstop comprises silicon nitride.

66. (Previously presented) The method of claim 61 wherein the material formed within the trench comprises silicon dioxide, and wherein the lower layer of the silicon dioxide comprises a higher density than the upper layer of the silicon dioxide.

67. (Previously presented) A method of filling a trench associated with a semiconductive substrate, comprising:

providing a semiconductive substrate;

forming a trench into the semiconductive substrate;

providing the semiconductive substrate in an environment of a set of processing parameters to form a first layer of a material within the trench, the set including a first temperature parameter; and

modifying the first temperature parameter of the set to a second temperature parameter to form a second layer of the material over the first layer and substrate, the first layer substantially filling the trench and having a wet etch rate less than a wet etch rate of the second layer.

68. (Previously presented) The method of claim 67 wherein the first temperature parameter comprises a temperature range of about 500°C to about 700°C.

69. (Previously presented) The method of claim 67 wherein the first temperature parameter comprises a temperature of about 600°C.

70. (Previously presented) The method of claim 67 wherein the second temperature parameter comprises a temperature range of about 300°C to about 400°C.

71. (Previously presented) The method of claim 67 wherein the second temperature parameter comprises a temperature of about 400°C.

72. (Previously presented) The method of claim 67 wherein the first temperature parameter comprises a temperature greater than the second temperature parameter.

73. (Previously presented) The method of claim 67 wherein the modifying comprising increasing a flow of helium against a backside of the substrate.

74. (Previously presented) The method of claim 67 wherein the wet etch rate of the first layer comprises about 1 times to about 1.3 times the etch rate of thermal oxide.

75. (Previously presented) The method of claim 67 wherein the wet etch rate of the second layer comprises about 1.5 times to about 2.5 times the etch rate of thermal oxide.

76. (Previously presented) The method of claim 67 wherein the first and second layers comprise silicon dioxide.

77. (New) A method of forming a polished material, comprising:

providing a substrate;

forming spaced trenches into the substrate, the substrate having an upper surface extending between the trenches;

forming a material within the trenches, the material comprising a lower layer and an upper layer over the lower layer, the lower layer substantially filling the trenches and having a different polishing rate than the upper layer, the lower layer joining the upper layer at an interface, the interface comprising first portions directly over the trenches and second portions directly over the upper surface of the substrate, the first portions being substantially coplanar; and

polishing the material to an elevational level below the first portions of the interface, wherein the polishing comprises polishing the first layer of the material at the second portions of the interface before the first portions of the interface, and wherein the polishing occurs at a faster rate at the second portions of the interface than the polishing at the first portions of the interface.